GELSF 57.1 No Date

WASHINGTON STATE DEPARTMENT OF ECOLOGY

GE SPOKANE DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY

In compliance with an Agreed Order with the Washington Department of Ecology (Ecology), the General Electric Company (GE) has conducted a Remedial Investigation and Feasibility Study in a Spokane industrial area. This area, including the former GE Spokane Service Shop, is located at East 4323 Mission Avenue in Spokane (the Site) (see Figure 1).

The Remedial Investigation (RI) focused on polychlorinated biphenyls (PCBs), which are strictly regulated under the Washington Model Toxics Control Act (MTCA) and the federal Toxic Substances Control Act (TSCA). PCBs are of concern because they may be toxic or poisonous to both the environment and human health. These chemicals also stay in the environment for a long time without breaking down.

In 1990, GE agreed to complete the investigation, conduct interim actions to limit risks to human health, assess the potential long term risks to human health and the environment, and perform a Feasibility Study to identify and evaluate cleanup options and accommodate public concerns.

SITE HISTORY

GE operated an apparatus repair and service shop at East 4323 Mission Avenue, Spokane, Washington, from 1961 to 1980. The property was sold to Brondt's Metal Magic, a woodstove and fireplace insert manufacturer in 1980, and was repurchased by GE in 1984.

Part of the work done at the service shop involved repair of electrical transformers. This activity included the storing of fluids containing PCBs at the site.

In September 1989, the Environmental Protection Agency (EPA) placed the former service shop area on the federal Superfund list of hazardous waste sites. Under an agreement with EPA, Ecology is the lead agency for oversight of the site investigations and cleanup, ensuring State and federal cleanup standards are met. The investigation has been conducted under the authority of and consistent with MTCA (Chapter 70.105D RCW), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

REMEDIAL INVESTIGATION (RI)

The purpose of the RI is to collect data necessary to adequately characterize the site for purposes of cleanup selection. The RI identifies the chemicals of concern, the area and materials which are affected by the chemicals, and the potential risks they pose to human health and the environment.

- Phase IV Remedial Investigation

Phase IV of the RI supplemented the results of three prior phases. Phase IV of the investigation provided information on PCB occurrence in soils and structures, and on interim actions taken to minimize the on-site potential risk to workers and to facilitate completion of the subsurface investiga-

FACT SHEET-JULY 1992

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If you are currently not on the GE Spokane mailing list and want to be, please call Dave Powell of Ecology toll free at 1-800-458-0920 or locally at (509) 456-4461.

PUBLIC COMMENT PERIOD ON DRAFT RI/FS

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tion. This phase determined that PCBs were the primary chemicals of concern at the site. It outlined some small localized areas of shallow soils containing PCBs in concentrations greater than 1000 parts per million (ppm), and somewhat broader areas of soils with PCB concentrations greater than 100 ppm. In deep soils, an area where PCBs were present was defined. This deep zone, known as the West Dry Well, contains PCBs in concentrations ranging from 1 to 25,000 ppm. The highest values were found in sludges in the dry well. Minor amounts of metals, solvents, and petroleum hydrocarbons are also present in this same area.

On site structures, including portions of buildings, roadways, and underground tanks and sumps were found to contain PCBs at levels requiring remedial action.

• Interim Action

All of the concrete and asphalt and most of the soil associated with underground structures that contained chemicals were removed during this phase. Site security was enhanced through perimeter fencing. Additionally, materials were gathered to perform a test of in-situ vitrification (ISV) technology. This process will be explained later.

• Phase V Remedial Investigation

Phase V of the RI concluded the ground water work on the site. The objective was to complete the characterization of site geology, hydrology, and ground water chemistry begun in previous phases. Six new wells were installed. All site wells were monitored quarterly for 1 year. This information helped define the extent and concentrations of chemicals present in ground water beneath the site.

The study confirmed PCBs were present in ground water beneath the site, at concentrations generally near 3 to 4 parts per billion (ppb). The PCBs ranged in concentration from below the detection limit to a one-time measurement of 150 ppb. The highest PCB concentrations were found in samples containing a very high amount of suspended sediment.

PCB concentrations decrease rapidly with increasing distance away from the West Dry Well. They are undetectable beyond approximately 250 feet from the West Dry Well. Thus, the study confirmed that ground water contains PCBs in a very small area, and that neither the Spokane River nor drinking water wells are potentially impacted.

Low levels of semi-volatile organic compounds were found associated with the PCBs. They are in the same area as the PCBs, and generally at levels below those of concern to health.

BASELINE RISK ASSESSMENT

A site risk assessment study was conducted to identify and evaluate potential risks to human health posed by the site. Potential routes of human exposure (pathways) of PCBs and other chemicals at the site were reviewed. Following that review, three potential pathways were retained for detailed analysis: ingestion of soil, absorption of contaminants through direct skin contact, and ingestion of ground water. Risk was analyzed for situations both prior to and after interim actions. Results indicate the current risk to human health is negligible because of the small size of the area of ground water contamination and because of security measures, including fencing. Long term risk, though low, is above risk standards established under MTCA, and remedial action will be necessary.

FEASIBILITY STUDY (FS)

The FS discusses and evaluates alterna-

tives that protect human health and the environment by eliminating, reducing and/or controlling potential risks posed by the site. Remedial alternatives for both ground water and soil risks are analyzed to determine which combination of alternatives will provide the greatest protection of human health and the environment and are cost effective.

Eight alternative methods for remediating ground water were reviewed, representing all available technologies. Because of the close interrelationship between soil sources and ground water impacts, five combinations of the above methods are analyzed in detail. They are:

- No action;
- Excavation of off-site disposal of soil, institutional controls and monitoring of ground water;
- Excavation and dechlorination of PCB-bearing soil, ground water extraction and discharge of untreated water to a publicly owned treatment works;
- In-situ (in-place) vitrification of soil, institutional controls and monitoring of ground water;
- Excavation and on-site incineration of soil; ground water extraction, treatment, and discharge to a publicly owned treatment works.

Evaluation of the no action alternative is required to establish a baseline for comparison of the other alternatives.

The second alternative would involve excavation of all chemical residues on-site and removal to an appropriate treatment and disposal site. Use of ground water would be controlled through deed restrictions, and wells would be monitored to ensure that the chemicals did not migrate and that concentrations decreased below regulatory levels once the source of chemicals is removed.

The third alternative involves excavation and on-site treatment through dechlorination of soils. This process chemically changes the PCBs to less toxic compounds, and removes them from the soils. Ground water would be extracted to prevent the migration of chemicals and treated at the Spokane Wastewater Treatment Plant under an approved permit.

The fourth alternative involves destruction of PCBs through vitrification of soils. This process thermally heats the soil in place, melting the soil to a glass, and in the process destroys the contained PCBs. By-product gases of this process are contained and treated. Use of ground water would be controlled through deed restrictions, and wells would be monitored to ensure that chemicals did not migrate, and that concentrations decrease below regulatory levels once the source of chemicals is removed.

The final alternative involves excavation of soils and treatment by a mobile incinerator set up on site. Incineration destroys the PCBs and other chemicals. Ground water would be extracted to prevent the migration of chemicals and treated on-site by filtration and activated carbon prior to discharge to the Spokane Wastewater Treatment Plant under an approved permit.

The preferred alternative, in-situ vitrification of soil coupled with institutional controls and monitoring of ground water, is selected based upon its protection of human health and the environment, in addition to ease of implementation and cost-effectiveness, compliance with applicable or relevant and appropriate requirements, and selection of remedies using permanent solutions to the maximum extent

practicable. This alternative also satisfies the preferences of treatment (rather than disposal) of materials, and long term effectiveness through destruction of hazardous substances.

Implementation of in-situ vitrification at this site is contingent upon successful demonstration of the technology in the ISV test cell, constructed on site. The FS presents contingent remedies (the third alternative) should pilot studies indicate that the preferred remedy will not be effective.

PUBLIC INVOLVEMENT OPPORTUNITY

The public is invited to review and comment on the Draft Phase IV and V Remedial Investigations, the Baseline Risk Assessment, and the Feasibility Study. Copies of these documents are available for public review at Ecology's Eastern Regional Office, Located at N. 4601 Monroe, Suite 100, in Spokane. A 30-day period, ending August 11, 1992, is provided for comment. Comments will be accepted at any time during this period and should be addressed to:

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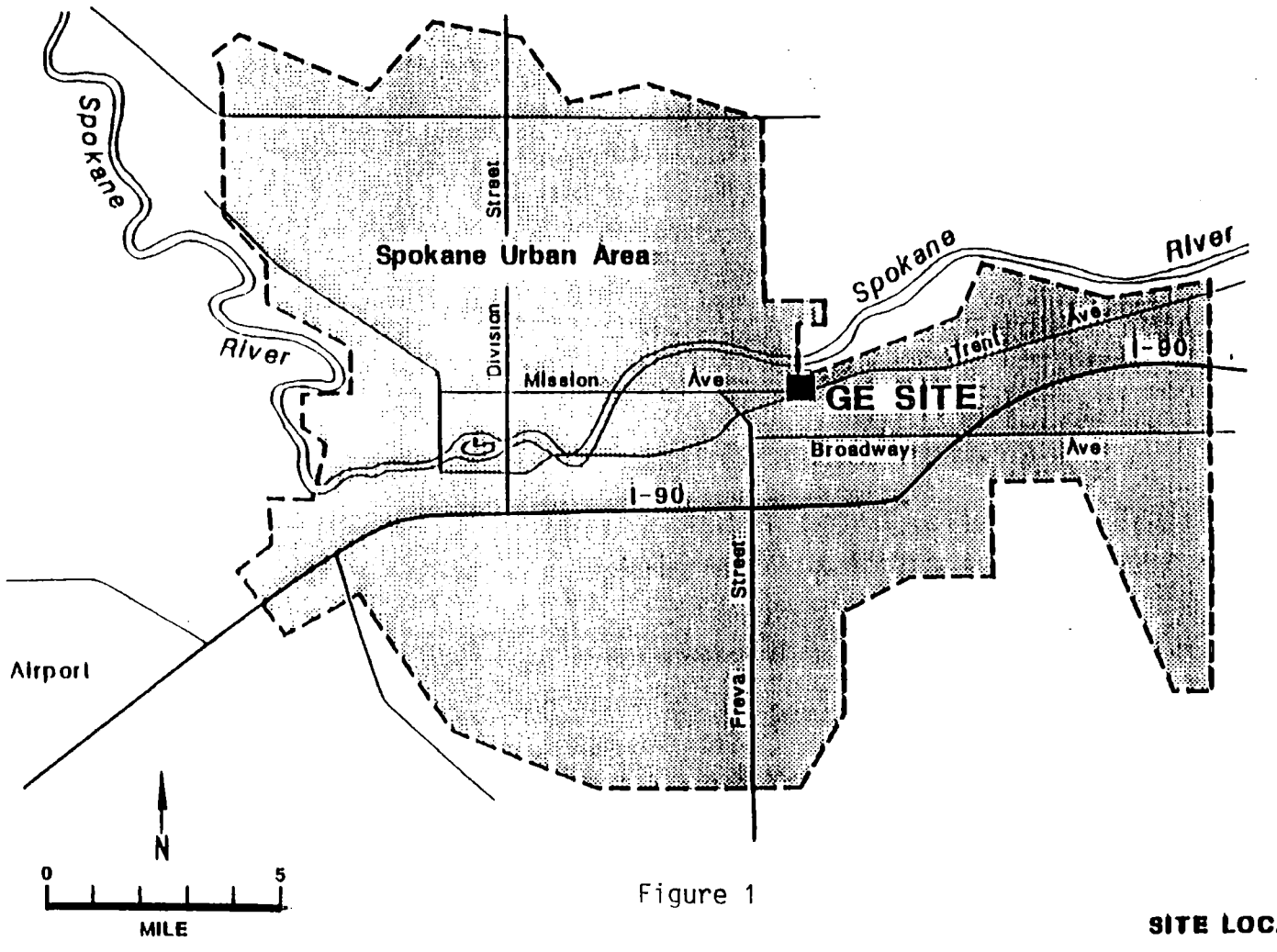

Figure 1

SITE LOCATION
G.E.